

wherein the traces and the off-assembly connections are on opposing sides of the electrical assembly; and
wherein an electrical connection is provided between a trace and a respective off-assembly connection.

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10. (Amended) The electrical assembly of claim 1,
wherein the off-assembly connections are organized as an array; and
wherein said adjacent off-assembly connections are nearest off-assembly connections.

11. (Amended) The electrical assembly of claim 10,
wherein the array is linear;
wherein for each off-assembly connection, there are two nearest off-assembly connections; and
wherein, for essentially each of the traces, there are two integrated transformer structures defined therealong to induce compensating crosstalk signals to oppose respective initial crosstalk signals introduced by each of said two nearest off-assembly connections.

REMARKS

Claims 1-15 and 23-30 remain pending herein. Claims 1-3 and 9-11 have been amended herein.

1. The drawings were objected to under 37 CFR § 1.83(a). As requested, attached hereto are proposed drawing corrections in the form of a copy of Fig. 2 marked in red to illustrate proposed corrections. Along with the amended specification, Fig. 2 has been corrected to clarify the nature of the transformer structures 110 and 110A-110D, and apertures 112 and 112A-112D. In addition, traces 10, 20, 30, 40, and 50 have been labeled as requested. The prior recitation in claim 1 of "pairs of traces" has been deleted in favor of a more accurate description as "portions of the traces." Further recitation of "a plated through hole or conductive via" in claim 9 has been deleted. Regarding recitation of "nearest to off-assembly connections," Applicant respectfully submits that such nearest off-assembly connections are clearly shown in the drawings. For

example, the off-assembly connections that are nearest to off-assembly connection 3, are off-assembly connections 2 and 4.

In accordance with the amendments to the present claims, the proposed drawing corrections attached hereto, and the amendments to the specification, Applicants request withdrawal of the objection to the drawings.

2. Claims 1, 2, 9, 10 and 11 were rejected under 35 U.S.C. § 112, second paragraph. Applicants respectfully submit that the amendments herein to those claims overcome this rejection.

In particular, turning to claim 1, amendments have been made to clarify the nature of mutual coupling between adjacent off-assembly connections, and clarify that the transformer structure includes portions of the traces that are essentially parallel to each other and which traverse a respective aperture.

Turning to claim 2, the claim has been amended to recite that the portions of the traces that are essentially parallel to each other and which traverse the aperture pass over or under the respective aperture. In this case, the aperture is generally provided in a plane above or below the respective portions of the electrical traces.

Turning to claim 9, the noted language has been deleted.

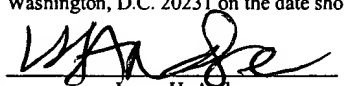
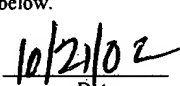
Turning to claims 10 and 11, Applicants submit that the claims have been amended to clarify the original intent and scope of the claims. In particular, claim 10 recites that the off-assembly connections are organized as an array, and the adjacent off-assembly connections are defined as nearest off-assembly connections. Claim 11 recites that essentially for each off-assembly connection, there are two nearest off-assembly connections, and further, for each off-assembly connection there are two transformer structures respectively associated with the initial cross-talk signals from each of the two nearest off-assembly connections.

For at least the foregoing reasons in view of the amendments to the present claims, reconsideration and withdrawal of the 35 U.S.C. § 112, second paragraph rejection are respectfully requested.


3. Claims 1-15 and 23-30 were rejected under 35 U.S.C. § 102. This rejection is respectfully traversed for the following reasons.

The discussion of the nature and scope of the presently claimed invention provided in the amendment filed January 15, 2002 is incorporated herein. While the PTO has relied upon newly cited Petersen for disclosure of each and every feature of the claimed invention, Applicants respectfully submit that Petersen fails to disclose (or even remotely suggest) transformer structures which include portions of traces that are essentially parallel to each other and a respective aperture in the voltage plane of the electrical assembly. Petersen completely fails to disclose such apertures. Rather, a general disclosure of flyback transformers 14, 16, 18 and 20 is made. For at least the foregoing reasons, Applicants respectfully submit that Petersen fails to disclose all features of the presently claimed invention. Accordingly, withdrawal of the 35 U.S.C. § 102 rejection over Petersen is respectfully requested.

Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a notice of allowance for all pending claims.

<u>CERTIFICATE OF MAILING</u>	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to Commissioner for Patents, Washington, D.C. 20231 on the date shown below.	
 Laura H. Andre	 Date

Respectfully submitted,


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ATTACHMENTS

Marked up copy of Fig. 2;

MARKED-UP COPY OF REPLACED PARAGRAPHS OF SPECIFICATION IN
ACCORDANCE WITH 37 C.F.R. § 121(b)(iii)

Although the design of transformer structures suitable to a given electrical assembly may vary depending on the characteristics or design of a particular electrical assembly, one advantageous configuration is particularly suitable for definition on a planar electrical assembly (e.g., on a board, card, package, or integrated circuit chip). In such configurations, a voltage plane is generally employed to reduce inductive coupling between traces 10, 20, 30, 40, and 50 on the electrical assembly. In one realization, apertures 112, 112A, 112B, 112C, 112D are defined in the voltage plane to provide the integrated transformer structures 110, 110A, 110B, 110C, and 110D. By orienting corresponding ones of the electrical traces (e.g., electrical traces 121, 122, 123, etc.) to traverse the apertures such that the relative direction of current flows therethrough opposes that through neighboring ones of the electrical connections, compensating and opposing crosstalk signals may be induced at the integrated transformer structures to provide crosstalk cancellation. In some configurations, electrical traces (e.g., 121, 122, 123, etc.) may be defined over (or under) an opening in the voltage plane below (or above). In other configurations, the electrical traces may be defined coplanar with the voltage plane and simply traverse in apertures defined therein. In such configurations, electrical traces and voltage planes may be formed using any suitable conventional process. Materials (such as metals, doped polysilicon, etc.) suitable for a particular electrical assembly will be appreciated by persons of ordinary skill in the art.

MARKED-UP COPY OF AMENDED CLAIMS IN ACCORDANCE WITH
37 C.F.R. § 121(c)(ii)

1. (Amended) An electrical assembly comprising:
traces extending toward respective off-assembly connections; and
integrated transformer structures defined along the traces to induce compensating
crosstalk signals having an opposing polarity [to] which opposes initial crosstalk
signals that are associated with mutual coupling between adjacent [of the] off-
assembly connections, wherein one or more of the integrated transformer
structures each [comprise] comprises an aperture in a voltage plane of the
electrical assembly[,] and [essentially parallel] portions of [corresponding pairs of]
the traces[, the] that are essentially parallel [portions traversing the] to each other
and which traverse a respective aperture.

2. (Amended) The electrical assembly of claim 1, wherein [the essentially parallel
portions of corresponding pairs] said portions of the traces pass over or under the respective
aperture.

3. (Amended) The electrical assembly of claim 1, wherein the [essentially parallel] said
portions of the traces are coplanar with the voltage plane.

9. The electrical assembly of claim 1,
wherein the traces and the off-assembly connections are on opposing sides of the
electrical assembly; and
wherein an electrical connection is provided between a trace and a respective off-
assembly connection [includes a plated through hole or conductive via].

10. (Amended) The electrical assembly of claim 1,
wherein the off-assembly connections are organized as an array [thereof]; and
wherein [, for each of the traces, one or more of the integrated transformer structures are
defined therealong to induce respective of the compensating crosstalk signals and

thereby oppose respective of the initial crosstalk signals introduced at a corresponding one of the off-assembly connections by nearest off-assembly connections of said corresponding one of the] said adjacent off-assembly connections are nearest off-assembly connections.

11. (Amended) The electrical assembly of claim 10,
wherein the array is linear;
wherein [the]for each off-assembly connection, there are two nearest off-assembly connections[number two]; and
wherein, for essentially each of the traces, there are two[of the] integrated transformer structures, [are]defined therealong to induce[respective of the] compensating crosstalk signals [and thereby]to oppose respective [of the]initial crosstalk signals introduced by [the]each of said two nearest off-assembly connections.